

SECTION C - DESCRIPTION/SPECIFICATIONS
PERFORMANCE WORK STATEMENT (PWS)
FOR
LOS ALAMOS NATIONAL LABORATORY (LANL)
NATURAL RESOURCE DAMAGE ASSESSMENT (NRDA) SUPPORT
SERVICES

C.1 GOALS AND OBJECTIVES

This Performance Work Statement (PWS) sets forth the tasks to be performed to complete a Natural Resource Damage Assessment (NRDA) and Restoration Plan based on injuries to natural resources from the release of hazardous substances from the Los Alamos National Laboratory (LANL). The objectives of the NRDA for LANL include:

- Conducting a Type B NRDA consistent with NRDA regulations at 43 CFR §§ 11.60 – 11.84, and other relevant guidance.
- Preparing a Restoration and Compensation Determination Plan consistent with 43 CFR §§ 11.81 – 11.84 (which may be part of the Report of Assessment), and other relevant guidance.
- Preparing a Report of Assessment consistent with 43 CFR § 11.90, and other relevant guidance.
- Preparing a Restoration Plan (to include an Environmental Assessment) consistent with the 43 CFR §§ 11.92 – 11.93, the National Environmental Policy Act (NEPA), and other relevant guidance. Plan will be referred to as a Restoration Plan/Environmental Assessment.
- Assisting the Los Alamos Laboratory Natural Resource Trustee Council (Trustee Council) with identification and selection of early restoration projects.
- Assisting the Trustee Council with conducting a public participation process for development of the Restoration and Compensation Determination Plan and the selection of restoration projects.
- Conducting the work under this PWS as expeditiously and efficiently as possible by, for example, utilizing existing data and reasonably conservative assumptions where possible.

C.1.1 LANL NRDA Project Background

In early 2008, the State of New Mexico, through the Office of Natural Resource Trustee (ONRT), the U.S. Department of Energy (DOE) and several other federal and tribal entities in the LANL region re-initiated an effort to pursue a NRDA based on releases of hazardous substances from LANL. The effort was established pursuant to a memorandum of agreement (MOA) executed in June 26, 2008. The MOA created the

Trustee Council that included DOE, the U.S. Department of Interior (DOI), the U.S. Department of Agriculture, the State of New Mexico, and San Ildefonso Pueblo. Jemez Pueblo and Santa Clara Pueblo joined the Trustee Council pursuant to an amendment to the MOA executed in January 6, 2010. In June 2013, the Trustees received notice that DOI would withdraw from membership of the Trustee Council. The MOA was revised and amended a second time, and executed in 2013 by all remaining parties. The Trustee Council has been and continues to work cooperatively on the NRDA.

Applicable statutes and regulations include the Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §§ 9601 et seq.; DOI NRDA regulations, 43 CFR Part 11; the Clean Water Act, 33 USC §§ 1251 et seq.; the Oil Pollution Act of 1990, 33 USC §§ 2701 et seq.; the Department of Energy Organization Act, 42 U.S.C. §§ 7101 et seq.; and the New Mexico Natural Resources Trustee Act, NMSA 1978, §§ 75-7-1 et seq. Other sources that inform the LANL NRDA include DOI Guidance and best practices.

Using 43 CFR § 11.31 as guidance for implementation of a NRDA, the Trustee Council with the assistance of a technical contractor prepared a draft LANL Assessment Plan. Public comment on the draft LANL Assessment Plan was received in the fall 2013, and the LANL Assessment Plan was finalized by the Trustee Council on April 30, 2014.

C.2 SCOPE OF WORK

The Contractor shall assist the Trustee Council with undertaking an NRDA for injuries to natural resources from releases of hazardous substances from LANL. To complete the NRDA, the Contractor shall utilize the work already completed for the Trustee Council; including the final LANL NRDA Plan (see <http://www.lanlnrda.org/>). The Contractor shall work closely with the Trustee Council in all phases of the scope of work. The Contractor shall furnish qualified personnel, equipment, materials, and services to perform the scope of work detailed in this PWS.

C.2.1 Task 1: Conduct Natural Resource Damage Assessment Activities

Consistent with 43 CFR 11, and other relevant guidance, and utilizing the information in the LANL NRDA Plan, the Contractor shall develop and implement innovative approaches to expedite the timeframe and efficiently complete the activities necessary to conduct a NRDA, consistent with NRDA regulations at 43 CFR §§ 11.60 – 11.84.

Table C-1 contains a list of potential assessment activities the Trustee Council has identified to assist the Contractor in identifying and quantifying the scale of natural resource injuries at LANL. The table includes activities associated with Tasks 1, 2, and 3. Task 1 activities are described below.

The Contractor shall complete the following:

- C.2.1.1 The Contractor shall conduct initial meeting with Trustee Council or individual Trustees and develop injury quantification estimates for injured resources and the services they provide.
- C.2.1.2 If requested by the Trustee Council, the Contractor shall prepare a Preliminary Estimate of Damages (PED) consistent with the guidance provided at 43 CFR § 11.38 and other relevant guidance. When available, the Contractor will consider existing and readily available information to develop the PED. This information may include the LANL Preliminary Injury Estimates (PIEs) prepared during the LANL Assessment Planning phase. The available information, such as that pertaining to lost Pueblo services, may not be adequate to inform all subjects of the PED, and additional information gathering may be necessary as outlined in the LANL NRDA Plan.
- C.2.1.3 The Contractor shall complete a review and analysis of existing site-specific data relating to surface water, groundwater, air, geological, and biological resources that may have been adversely impacted by releases of hazardous substances as a result of LANL activities.
- C.2.1.4 The Contractor shall facilitate Trustee Council consensus on determining representative resources for each of the habitat areas and any resources of specific concern. Habitat types are broadly defined as canyon bottom habitat, upland terrestrial habitat, and aquatic habitat.
- C.2.1.5 The Contractor shall evaluate baseline conditions of affected resources—that is, conditions that would have existed had the discharge or release of hazardous substances under investigation *not* occurred-- and report to the Trustee Council for review, comment, and approval.
- C.2.1.6 The Contractor shall review literature-based data from LANL (as cited in the February 2014 *NRDA Plan* or other published reports) and present recommendations for revisions to planned assessment activities to the Trustee Council.
- C.2.1.7 The Contractor shall evaluate the Assessment activities as stated in *the NRDA Plan* and as shown in Table C-1 below, and discuss an approach for phasing the execution of activities with the Trustee Council. The Contractor shall identify any relevant data gaps and propose options for appropriately filling those gaps, including the use of reasonably conservative assumptions, alternative approaches (e.g. systems-based and/or restoration-focused approaches), and/or additional field-centric approaches for data collection and analysis.

- C.2.1.8 The Trustee Council may request the Contractor to design and implement any necessary studies that would provide additional data. The Contractor may propose to reconfigure studies to fill data gaps more effectively and efficiently
- C.2.1.9 For natural resources with sufficient data, or where reasonable conservative assumptions can be made and agreed to by the Trustee Council, the Contractor shall estimate service losses.
- C.2.1.10 The Contractor shall estimate percentage service loss and spatial extent of injuries for each habitat or resource of specific concern. The Contractor shall facilitate agreement among the Trustees on a method and one or more thresholds for calculating adverse impacts to natural resources and associated lost services by releases at or from LANL.
- C.2.1.11 The Contractor shall quantify the total volume of injured groundwater and the associated lost services. The Contractor shall estimate the probable migration of existing groundwater contaminant plumes, both on and off site, under a reasonable range of likely remedial scenarios.
- C.2.1.12 The Contractor shall work with the Trustee Council to identify valuation methods and restoration-based alternatives for compensating for injuries identified in Task 1, including but not limited to restoration actions that will replace public losses, and the cost of these actions.

C.2.2 Task 2: Prepare a Restoration and Compensation Determination Plan, a Report of Assessment, and a Restoration Plan/Environmental Assessment following review process described in section C.3.2.6

- C.2.2.1 The Contractor shall estimate the damages, if any, resulting from any injuries identified as a result of Task 1, and produce a Draft Restoration and Compensation Determination Plan consistent with 43 CFR §§ 11.81 – 11.84 and other relevant guidance. The Restoration and Compensation Determination Plan may be part of the Report of Assessment.
- C.2.2.2 The Contractor shall assist the Trustee Council with the public participation process and shall develop the Report of Assessment/Final Restoration and Compensation Determination Plan consistent with 43 CFR § 11.81 and other relevant guidance. This assistance shall include preparation of a “comment response document” summarizing written

and oral comments received on the draft plan for submission to the Trustee Council for review and approval. The final plan will reflect disposition of comments received as documented in the response document.

- C.2.2.3 The Contractor shall quantify injury to natural resources and the services they provide based on the methodology and threshold or thresholds established by the Trustee Council, and shall prepare a Report of Assessment consistent with 43 CFR § 11.90 and other relevant guidance.
- C.2.2.4 The Contractor shall develop written descriptions of potential restoration projects, including early restoration projects, based on the Report of Assessment/ Restoration and Compensation Determination Plan. The Contractor shall evaluate potential restoration projects with Trustee Council-approved criteria and shall prepare a draft and final Restoration Plan/Environmental Assessment consistent with 43 CFR §§ 11.92 – 11.93, NEPA, and other relevant guidance.
- C.2.2.5 The Contractor shall assist the Trustee Council with the public participation process for the Restoration Plan/Environmental Assessment consistent with 43 CFR §§ 11.81 and 11.93, NEPA, and other relevant guidance. This assistance shall include preparation of a “comment response document” summarizing written and oral comments received on the draft plan for submission to the Trustee Council for review and approval. The final plan will reflect disposition of comments received as documented in the response document.

C.2.3 Task 3: Prepare the Administrative Record

- C.2.3.1 The Contractor shall prepare an electronic Administrative Record of all documents and materials relied upon for the NRDA, the Restoration and Compensation Determination Plan, the Report of Assessment, the Restoration Plan/Environmental Assessment and other activities performed by the Trustee Council.

C.2.4 Task 4: Maintain Trustee Council Website and Perform Administrative Support Activities to Trustee Council

- C.2.4.1 The Contractor shall maintain and update the Trustee Council website ensuring that all significant public documents produced by the Trustee Council are placed on the website.

- C.2.4.2 The Contractor shall provide administrative support activities to Trustee Council such as comment resolution, meeting minutes, and tracking of actions.

C.2.5 Activities/Deliverables

- C.2.5.1 The Contractor shall develop a project schedule for each task order issued under the contract which shall be included in the task order's Project Management Plan as outlined in Section C.3.2.1. The schedule of activities/deliverables provided below is a partial estimate of the requirements under this contract. As task orders are issued, the Contractor shall provide a comprehensive schedule in the task order's Project Management Plan for all required activities/deliverables as well as others deemed necessary by the Contractor. The Contractor shall perform the following activities and provide the following deliverables under the contract. All deliverables requiring Trustee Council review, revision, and approval will follow the process outlined in Section C.3.2.6. Due dates for deliverables will be specified in task orders.

Activity/Deliverables		Section
1.	Prepare Project Management Plan and revise per the Contracting Officer Representative's (COR's) direction.	C.3.2.1
2.	Attend Site Orientation Briefing and Tour.	C.3.2.3
3.	Conduct initial meeting with Trustee Council or individual Trustees, if required.	C.2.1
4.	Evaluate the Assessment Activities and discuss an approach for phasing the execution of activities with the Trustee Council.	C.2.1
5.	Develop injury quantification estimates for injured resources and the services they provide.	C.2.1.1
6.	Prepare a PED consistent with the guidance provided at 43 CFR § 11.38 and other relevant guidance, if requested.	C.2.1.2
7.	Complete a review and analysis of existing site-specific data related to surface water, groundwater, air, geological, and biological resources that may have been adversely impacted by releases of hazardous substances on and from LANL activities.	C.2.1.3
8.	Review literature based data and present recommendations for revisions to planned	C.2.1.6

	assessment activities to Trustee Council.	
9.	Determine, with consensus of Trustee Council, representative resources for each of the habitat areas and any resources of specific concern.	C.2.1.4
10.	Evaluate baseline conditions for each affected resource and report to Trustee Council for review, comment, and approval.	C.2.1.5
11.	Identify data gaps and propose options to Trustee Council.	C.2.1.7
12.	Design and implement any necessary studies and/or recalibrate existing studies to fill data gaps.	C.2.1.8
13.	Establish percentage service loss and spatial extent of injuries for each habitat or resource of specific concern and facilitate agreement among the Trustees on a method and the thresholds for calculating adverse impacts to natural resources.	C.2.1.10
14.	Work with Trustee Council to identify valuation methods and restoration-based alternatives for compensating for injuries.	C.2.1.12
15.	Prepare and submit a Preliminary Draft Restoration and Compensation Determination Plan (RCDP) to the Trustee Council for review and comment.	C.2.2.1
16.	Prepare a Final Draft RCDP for review, comment and approval by the Trustee council; the revised Final Draft Plan will be used for public review and comment.	C.2.2.2
17.	Support the Trustee Council in preparing for and facilitating a public meeting on the final draft RCDP.	C.2.2.2
18.	Prepare a summary of written and oral public comments on Final Draft RCDP and proposed disposition for Trustee Council review, revision, and approval.	C.2.2.2
19.	Incorporate public comments into Plan and prepare an appropriately-scaled Final RCDP for Trustee approval.	C.2.2.2
20.	Prepare and submit a Preliminary Draft Report of Assessment consistent with 43 CFR § 11.90 to the Trustee Council for review and comment.	C.2.2.3
21.	Incorporate Trustee Council comments into the Preliminary Draft Report of Assessment and prepare a Final Report of Assessment for Trustee	C.2.2.3

	approval.	
22.	Prepare and submit a Preliminary Draft Restoration Plan/Environmental Assessment to the Trustee Council for review and comment.	C.2.2.4
23.	Prepare a Final Draft Restoration Plan/Environmental Assessment for review, comment and approval by the Trustee council; the revised Final Draft Plan will be used for public review and comment.	C.2.2.4
24.	Support the Trustee Council in preparing for and facilitating a public meeting on the draft Plan.	C.2.2.5
25.	Prepare a summary of written and oral public comments and proposed disposition for Trustee Council review, revision, and approval.	C.2.2.5
26.	Incorporate public comments into Plan and prepare a Final Restoration Plan/Environmental Assessment for Trustee approval.	C.2.2.5
27.	The Contractor shall prepare an electronic Administrative Record of all documents and materials relied upon for the NRDA, the Restoration and Compensation Determination Plan, the Report of Assessment, the Restoration Plan/Environmental Assessment and other activities performed by the Trustee Council.	C.2.3.1
28.	The Contractor shall maintain and update the Trustee Council website ensuring that all significant public documents produced by the Trustee Council are placed on the website.	C.2.4.1
29.	The Contractor shall provide administrative support to Trustee Council such as recording Trustee Council meeting notes, coordinating agendas, and other administrative tasks.	C.2.4.3
30.	For each deliverable requiring Trustee Council review and approval, create and maintain a comment log.	C.3.2.6 a,b,c,d
31.	Submittal of the record file to the COR.	C.3.2.12
32.	On a yearly basis the Contractor shall provide a report to the Contracting Officer calculating the percentage of work and reflecting compliance with the requirements set forth in FAR 52.219-14. In addition the Contractor shall provide sufficient documentation on how the percentage was computed. The report shall be fully supported, including but not limited to, a	I.37

	narrative explanation and backup supporting documentation, to allow the CO and COR to fully understand the computation and the basis of the computation.	
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C.3 TECHNICAL REQUIREMENTS

C.3.1 Technical Specifications

The Contractor must follow the technical specifications that apply directly to the development and finalization of specified plans listed in Section C.2.2. As such, the deliverables identified in this PWS must follow the regulations and DOI NRDA Implementing Procedures unless deviations are approved by the COR in writing on an individual task order basis. The Contractor will be expected to provide the Trustee Council with recommendations for efficiencies that can be realized for any portions of the natural resource damage assessment process covered under this contract.

C.3.2 Other Requirements

The Contractor shall conduct site visits as necessary and shall attend Trustee Council meetings in person or by telephone, as determined by the Trustee Council. The development of the Restoration and Compensation Determination Plan, Report of Assessment, and Restoration Plan/Environmental Assessment shall generally be performed at the Contractor's offices.

- C.3.2.1 In addition to individual task order work plans that may be required, the Contractor shall prepare an overall Project Management Plan based on the tasks in this PWS and relevant requirements and guidance, as follows:
- a. The Project Management Plan shall be submitted to the COR for evaluation. The Contractor shall make any revisions recommended by the COR. The Contractor may review and recommend additional revisions to the COR; however, all revisions must be approved by the COR.
 - b. The Project Management Plan shall identify how the work under the task order will be addressed. It shall include (1) a description

of methods proposed to plan, manage, control, and report on the work; (2) a project organization chart with a description of the roles and responsibilities of key individuals and groups; (3) a staffing plan for cost-effective utilization of staff resources and a process proposed for maintaining communication and control regardless of project staff location; (4) a proposed work breakdown structure for planning, managing, and reporting purposes; (5) a schedule for completion of the work; (6) a proven approach for managing project risk derived from cost, schedule, technical, public, or regulatory unknowns; and (7) a quality assurance plan, described further below.

- c. The Project Management Plan shall include a quality assurance plan for executing the work that describes how the Contractor will track, validate, and calculate data to be used in development of the plans listed in Section C.2.2. The quality assurance plan shall include a change tracking system. The quality assurance plan shall include a document style guide that addresses writing style, format, table and figure presentation, use of numerical units, and referencing. All deliverables shall exhibit correct spelling and grammar, and shall use a professional format without any corporate tags (such as headers, footers, or stationery). **Rework of deliverables due to errors of this nature (rather than changes) shall be done at no additional charge to DOE.** All deliverables shall be clear and concise, and consistent with applicable NRDA regulations and guidance.
- d. All work under each task order shall be completed in accordance with the task order's Project Management Plan. The Contractor shall furnish all labor, materials, equipment, facilities, transportation, and incidentals necessary to perform the work under each task order in accordance with the task order PWS.

C.3.2.2 The Contractor shall establish, maintain, and use a performance measurement system that accurately records and reports performance under each task order against task order requirements. The Contractor shall submit a Monthly Progress Report for each task order not later than the eighth business day prior to the end of each calendar month. For firm fixed-price task orders (where management is established by performance milestones, schedules, and percentage of project completion), the performance measurement system must provide adequate insight into potential risks to DOE relating to achievement of cost, schedule and technical performance objectives, as determined by the contracting officer. For Time-and-Materials task orders, the performance measurement system must provide a sufficient level of detail to demonstrate progress against planned scope, schedule, and

budget, as well as brief descriptions of issues and the Contractor's plans for recovery of undesirable cost and schedule variances.

- C.3.2.3 A task order will be issued immediately upon award of this contract under which the Contractor shall be required to attend a three day orientation briefing and tour of LANL, to be arranged within one week of award of the contract and issuance of the task order. The purpose of this briefing is to introduce the Contractor to the Trustee Council, and provide an opportunity for the Contractor to ask questions regarding the site environmental setting, site operations, data sources and access, etc. At a minimum, the attendees should include the project manager and other resource area leads for up to five people. DOE will approve the final list of attendees. If there is insufficient time to have substantive discussions with the Trustee Council during the orientation session, DOE will arrange for additional meetings within 30 days of award if possible.
- C.3.2.4 During the same week as the orientation meeting, the Contractor shall meet separately with the COR and other DOE officials to discuss the contract expectation and submittals, and retrieval and utilization of existing data.
- C.3.2.5 The Contractor shall include an overall project schedule in its proposal. The schedule will be updated and submitted as part of the Project Management Plan. Note: individual task orders may require a separate, detailed schedule.
- C.3.2.6 All reports identified in this PWS shall follow a review process:
 - a. The Trustee Council requires two rounds of review, for a duration of 30 calendar days per review, for the draft Restoration and Compensation Plan, the draft Report of Assessment, and the draft Restoration Plan deliverables. The Trustee Council may request review of other deliverables in Task 1 and Task 2. In addition, DOE will perform a quality check of the final draft document, with a DOE review period of five business days, prior to finalization of the documents for print. The Contractor shall work with DOE to obtain and resolve Trustee comments.
 - b. Where a task requires a presentation of a report or a discussion with the Trustee Council, the report or discussion materials will be transmitted to the Trustee Council a minimum of five working days prior to the Trustee Council Meeting.
 - c. Deliverables for the second round of review and draft final documents shall include a red-line/strikeout draft as well as a read copy draft.

- d. All comments shall be responded to in a comment log (format to be developed by the Contractor) that contains the following:
 - i. A statement or summary of each comment made by the Trustee Council, an individual Trustee, or a member of the public;
 - ii. The identity and affiliation, if any, of each commenter; and
 - iii. A statement describing the final disposition for each comment in the document.
- C.3.2.7 All reports shall be provided in Microsoft Word format, with the final report/document provided in .pdf format. DOE will distribute final documents to the Trustees and other interested parties and public reading rooms as applicable.
- C.3.2.8 Documentation, rationale, and/or references shall be furnished for all analytical assumptions. Calculation packages shall be furnished with all technical analysis. All technical calculations and analysis will be validated for accuracy.
- C.3.2.9 The Contractor will be required to participate in Trustee Council meetings at locations to be specified by DOE and to participate in conference calls with the Trustees. The Contractor is to provide draft meeting minutes for all meetings or conference calls the Contractor participates in for the Trustee Council review, comment, and approval.
- C.3.2.10 The Contractor will provide 20 printed and bound copies of the Draft and Final versions of: the Restoration and Compensation Determination Plan, the Report of the Assessment, and the Restoration Plan/Environmental Assessment for distribution to the Trustee Council and the public.
- C.3.2.11 The Contractor shall maintain an electronically-based record file of all documents, reports, calculations, etc. used to prepare reports and supporting deliverables in this PWS. The file must have search capabilities and be kept current as work progresses. Records placed in the file may be both hard copy and electronic. Custodial transfer of the record file may occur at any time during the document preparation process at the request of the COR, and shall occur after the distribution of the final deliverables. The Contractor shall deliver the record file at a time and to a place designated by the COR.

C.3.3 Place of Performance

The Contractor shall conduct site visits as necessary; however, the actual development of documentation shall be performed at Contractor facilities. Location(s) for Trustee meetings will be provided by DOE.

C.3.4 Resource Requirements and/or Government Furnished Property

No resources/equipment, other than data and documents, will be made available by DOE.

C.3.5 Travel Requirements

Contractor travel is authorized for appropriate site investigations, meetings, and other activities and shall be reviewed and approved by the Contracting Officer on individual task orders. Travel shall be in accordance with Federal Travel Regulations. For each potential location, the Contractor shall propose the number of trips, personnel, days, air fare, rental car, per diem, and other costs estimated to be required.

Table C-1: Ongoing and Planned NRDA Studies

The following studies and activities are being considered for implementation by the Trustee Council in order to assess the magnitude of natural resource injuries resulting from hazardous substance releases from LANL and the specific set and scale of restoration projects that will be implemented to make the public whole for such injuries. The Trustee Council has conducted a preliminary review of data as part of the assessment planning process and anticipates the NRDA will begin with a formal evaluation of available data, followed by implementation of field studies or use of reasonably conservative assumptions, if necessary, to fill data gaps. Ongoing efforts and planned studies are identified below.

CATEGORY / RESOURCE	ACTIVITY	OBJECTIVE
INITIAL PRIORITIES (1)		
ENVIRONMENTAL MEDIA	Review of available environmental media contamination data in Intellus	Summarize available surface water, soil, and sediment data and compare to information on adverse ecological effects from peer reviewed literature.
	Compilation and review of site-specific information on potential adverse impacts to biota	Summarize available information on impacts to biota and compare to information on adverse ecological effects from peer reviewed literature.
BIOTA	Review of site-specific toxicity studies and development of additional sampling plans as necessary	Compile and review available soil and sediment and/or plant toxicity studies to determine what conclusions may be drawn with respect to injury determination and quantification for environmental medium and associated biota.
CONTAMINANTS OF CONCERN	Identify contaminants of concern and develop ecotoxicological profiles	Determine the major contaminants of concern for injury assessment and develop profiles summarizing ecotoxicity information.
DATA MANAGEMENT	Treatment of non-detects in studies analyzing existing data	Evaluate the range of options for handling non-detect sample results in order to determine a preferred path forward for treatment of non-detects in existing data.
NEARER-TERM PRIORITIES (2)		
ENVIRONMENTAL MEDIA	Review of available data on surface water flow frequency and volume in assessment area canyons	Compile and review information on surface water flow in order to better characterize when and for how long canyons are understood to be wet habitat.
	Evaluation of the impact of wildland fires on pathway, injury, and restoration	Determine and evaluate the role of wildlife fires as a pathway, as a baseline ecological factor, and as a possible basis for restoration actions.
	Soil and sediment geospatial evaluation	Identify which surficial soils and sediments are likely to have been exposed to contamination, and identify geographic areas where additional sampling may be necessary to characterize contamination for injury assessment purposes.
	Exploration of historical soil and sediment contaminant concentrations	Explore historical soil and sediment contaminant concentrations and evaluate whether additional sampling is warranted to determine soil and sediment baseline conditions.

CATEGORY / RESOURCE	ACTIVITY	OBJECTIVE
GROUNDWATER	Define the baseline services provided by groundwater and service losses attributable to hazardous substance contamination	Describe the services provided by groundwater in and around LANL under baseline conditions and how these services have been impacted by the release of hazardous contaminants.
HUMAN SERVICES	Inventory of institutional controls, description of associated limits on human use of the site, and identification of restoration projects	Determine the extent to which institutional controls at the LANL site, past, current, and expected future, are related to the release of hazardous contaminants, define the geographic scope and nature of these controls, and describe the types of human uses that may be impacted.
PUEBLO SERVICES	Resource characterization to facilitate assessment and restoration of pueblo lost services	Organize and present characterization and monitoring contaminant information for use by Pueblo members as well as the general public, determine where contamination has not been adequately characterized for NRDA purposes, and identify where additional characterization or monitoring of contaminant concentrations might be needed.
	Development of Pueblo-specific narratives of cultural use and perceptions of natural resources	Document the relationship between the affected Pueblo communities and injured natural resources, identify natural resources and nature and extent of services they provide, and document the risks and perception of risks associated with exposure to injured natural resources.
MIDDLE-TERM PRIORITIES (3)		
BIOTA	Fish tissue collection in relevant assessment area waters and evaluation of adverse effects	Conduct electroshocking to determine if/where fish are present, collect information on fish distribution, abundance, and deformities, collect fish tissue samples, analyze contaminant concentrations, assess potential correlations between field measures and exposure, and compare exposure to information on adverse ecological effects from peer reviewed literature.
	Evaluation of distribution, abundance, and exposure in herpetofauna	Collect information on amphibian and reptile species distribution and abundance, collect soil and/or sediment samples and possibly tissue samples, and determine whether correlations exist between distribution and abundance metrics and either habitat characteristics or measures of exposure to contaminants.
	Evaluation of abundance, exposure and adverse effects in avian species	Collect information on reproductive success, abundance, and diversity; evaluate the exposure of selected avian species to LANL-related contaminants, as indicated through measurements of contaminants in eggs; evaluate potential correlations between field metrics and exposure.
	Evaluation of abundance, exposure and adverse effects in mammalian species	Collect information on abundance and diversity; evaluate the exposure of selected mammalian species to contaminants of concern through measurements of contaminants in tissues; evaluate potential correlations between field metrics and exposure.
LONGER-TERM PRIORITIES (4)		
ECOLOGICAL SERVICE LOSSES AND DAMAGES	Quantification of lost ecological services	Compile and analyze resource-use specific information from previous analyses to quantify lost services.
	Determination and monetization of ecological damages	Identify and scale restoration projects needed to compensate for ecological injuries and associated lost services.

CATEGORY / RESOURCE	ACTIVITY	OBJECTIVE
GROUNDWATER SERVICE LOSSES AND DAMAGES	Quantification of injured groundwater, volume and time dimensions	Quantify injured groundwater volume and time dimensions using existing information and information obtained from activities listed in this Plan.
	Determination and monetization of groundwater damages	Identify and scale restoration projects needed to compensate for groundwater injuries and associated lost services.
PUEBLO SERVICE LOSSES AND DAMAGES	Assess Pueblo Service Losses	Identify data gaps and select and implement appropriate approach(es) to fill those gaps to determine Pueblo service losses associated with LANL hazardous substance releases.
	Determination and monetization of pueblo damages	Identify and scale restoration actions needed to compensate affected Pueblos for service losses experienced as a result of LANL hazardous releases.